REMARKS

This amendment responds to the office action mailed March 12, 2004. In the office action the Examiner:

- rejected claims 1-9 under 35 U.S.C. 103(a) as being unpatentable over Ogata (U.S. 5,055,911) in combination with Noda (JP 406169033).

After entry of this amendment, the pending claims are: claims 1-9.

Claim Rejections - 35 U.S.C. 103(a)

Applicant's invention is directed to an integrated circuit package. The package comprises a lead finger mounting ring that serves the dual purposes of mounting a package lead on its top surface (Figs. 1B and 2B) and extending upwards to form a container together with the top of a substrate (Figs. 1A and 2A). The package further comprises a bond wire with its first end ***bonded to*** the package lead and its second end ***bonded to*** a bond bad on a semiconductor die located in the container (Figs. 1C and 2B). The container confines a liquid epoxy material during a curing process to form a first encapsulation over the bond wire, the semiconductor die, and a portion of the package lead (Fig. 1D). The package also comprises a mold compound that forms a second encapsulation over the first encapsulation, the lead finger mounting ring, ***the top and the bottom*** of the substrate, and a portion of the package lead (Fig. 1E).

In contrast to applicant's package, the fine metallic wires 11 in Figs. 1 and 2 of Ogata are not bonded to the leads 6a and 6b. Instead, the fine metallic wires 11 are bonded to a Au-plated layer 4. As shown in Fig. 2, the Au-plated layer 4 is formed on a Ni-plated layer 3, which covers the metallized layers 12a and 12b formed on the frame ceramic member 5, and the leads 6a and 6b are brazed on the Ni-plated layer 3. In other words, an electrical signal generated by the semiconductor chip 9 needs to travel through the wires 11, the Au-plated layer 4, the Ni-plated layer 3 and the metallized layers 12a and 12b before reaching the leads 6a and 6b (Col. 3, lines 1-30). These additional metal layers (3, 4 and 12) not only increase the parasitic resistance along the signal path, but also require a more complicated manufacturing process, while the bond wire 250 in applicant's package is bonded to the package lead 260, which not only reduces parasitic resistance, but also significantly simplifies the manufacturing process.

Additionally, the Examiner has acknowledged that Ogata does not disclose (1) an epoxy material confined by the lead finger mounting ring and forming a first encapsulation

over the bond wire, the semiconductor die, and a portion of the package lead, and (2) a mold compound forming a second encapsulation over the first encapsulation, the lead finger mounting ring, the substrate, and a portion of the package lead.

The Examiner relies on Noda to make up these deficiencies. Noda, however, does not disclose a mold compound forming a second encapsulation over the first encapsulation, the lead finger mounting ring, ***the top and the bottom*** of the substrate, and a portion of the package lead. Noda only teaches that the first resin 19 and the electrical testing parts 21 are covered with a second resin 29. Unlike applicant's mold compound 280 that completely encapsulates the substrate 210 on both sides (Fig. 1E), the second resin 29 in Noda only covers a portion of the top surface of the substrate 5 (Fig. 1A), leaving the bottom surface of the substrate 5 exposed and not encapsulated by the second resin 29. As a result, the second resin 29 is less effective in protecting the package from environmental impacts when compared with the mold compound recited in claims 1 and 6.

Since Ogata and Noda, either alone or jointly, do not teach or suggest a bond wire that is bonded to the package lead or a mold compound that forms a encapsulation over the top and the bottom of substrate as recited in claims 1 and 6, claims 1 and 6 as well as their respective dependent claims 2-5 and 7-9 are patentable over Ogata in view of Noda.

In light of the above amendments and remarks, the applicant respectfully requests that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned at (650) 493-4935, if a telephone call could help resolve any remaining items.

Respectfully submitted,

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